# ICT Final Revision

# Axis 1

## Lesson 2: Computer Accessories

•**Flash Memory:**
 It is used to transfer files and data from one computer to another.

•**Ethernet Cable:**
 It is a cable that connects your computer or laptop to the router.

•**Router:**
 It is a device that connects your computer to the Internet via Wi-Fi or Ethernet.

•**Ethernet Port:**
 Connects an Ethernet cable and Ethernet is the most stable and faster than Wi-Fi.

•**External Hard Drive:**
It is like a hard disk drive but it works better and faster.

•**HDMI (High Definition Multimedia Interface):**
A cable transmits audio and video to and from devices.

### Units of measurement:
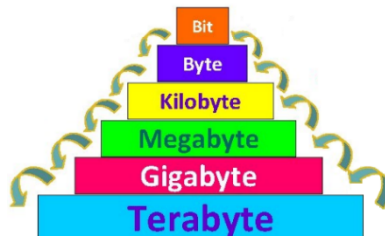
Bit: the smallest unit of data (0 - 1)
Byte (B): 1 byte = 8 bit = 1 character; the word (dog) has 3 letters and would need 3 bytes.
Kilobyte (KB): 1024 B
Megabyte (MB): 1024 KB
Gigabyte (GB): 1024 MB
Terabyte (TB): 1024 GB

•**Mbps (Megabits per second):**
A unit of measurement used to measure the speed of a network or internet connection.

•**(GHz) Gigahertz:**
A unit of measurement for the number of cycles your CPU carries out per second. The higher the number of cycles, the faster the processor can process data and convert it into information.

### Problems while using the computer and solutions

| Problem | Reason | Solution |
|---|---|---|
| 1. Problem processing large files, like a PowerPoint 2. Presentation | Not enough storage space | Close some programs |
| 3. Not able to store files | Not enough space | Move old files to an external drive |
| 4. Poor network connection during video conference | Weak and slow wireless internet connection | Try an Ethernet connection |
| 5. Home Internet is not working | Connection interrupted | Use Ethernet or contact your ISP (Internet Service Provider) |

## Lesson 3: Networks

• Computer networks <u>connect computers</u> with each other to <u>share</u> important information and data.

•You may have <u>your own computer</u> network at home, if you have a computer connected to another computer

or any device such as a <u>printer or router</u>, then you have your own <u>LAN</u> (<u>Local Area Network</u>).

- **Firstly: What is the Internet?**
It is a network that connects computers and people who use that network from all over the world.

- **What do you need to connect your computer to the Internet?**
We need a Gateway such as a router that connects the computer to the ISP Internet Service Provider, such as the Internet service provided by Egyptian companies to citizens.

- **What is the World Wide Web (WWW)?**
World Wide Web is part of the Internet. It consists of network pages or web pages that people can navigate between them.

  <u>Example:</u>
  The Egyptian Knowledge Bank is on the World Wide Web and is available for free to all Egyptians who registered on the site.

- **Secondly: What is an Intranet?**
It is another type of network. Unlike the Internet, it is private and limited to a group of people who are linked together by this network.
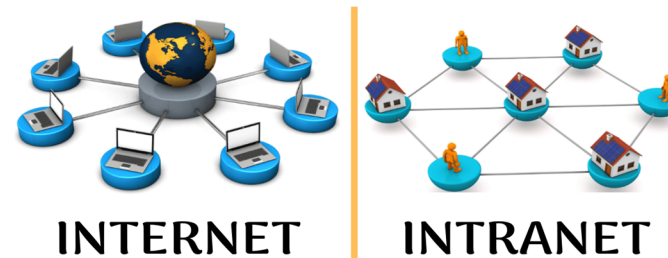  <u>Such as: a business network, a school, or a specific institution.</u>

- **Thirdly: Closed Network:**
There is a network called the Closed Network, which can be in the computer lab in the school and be its own.

<u>We understand from this:</u>
That there are networks that are <u>open</u> and <u>available to everyone</u>, and a <u>closed</u> network, such as the network in a computer lab, may contain computers connected by cables to <u>allow file sharing</u>.



**INTERNET | INTRANET**

## Lesson 4: Digital Communication Tools

- We communicate daily using computer networks.
- Whenever we use our phones to send texts, buy something, take online lessons, download or upload videos, or run applications or programs, we are using a computer network.
- Companies and organizations also use networks daily to share information, some of which are private through closed networks and some are public through open networks.
- Household items can also be part of a network, and this is called **Internet of Things**.

- **What is the Internet of Things?**
The **IOT** consists of devices connected to the Internet via Wi-Fi that you can control whether you are in the same room or another city.

- **Example: Bluetooth Speakers used to listen to music.**

Home appliances such as a Digital Refrigerator or Digital Washing Machine can be turned on and off using specific applications.

- **What is Bluetooth?**

It is a network technology that connects wireless mobile devices over a short range to form a network to transmit data between different devices.

- **Networks and People of Determination:**

- Listen to music on Bluetooth speakers.
- Using the Egyptian Knowledge Bank because it contains a lot of interesting and interesting information.
- Purchasing items online as it is characterized by digital privacy to take the highest security standards when giving private information to anyone.
- Use Screen Readers for Audio Feedback and Braille reading assistance.

Computer networks give people of determination more independence, whether at home or in public places. This independence helps them save money and time, and helps them increase their level of self-confidence.

- **How do screen readers help People of Determination?**

It helps them do everything they need like writing papers – accessing documents on their laptop.

- **How does Braille help people of determination?**

It makes reading much easier because they can read using their fingers.

## Lesson 5: Internet Connection Problems and Solutions

You may face many problems while using your device like Hardware problems, software, weak or interrupted Internet Connection.

Follow this troubleshooting process to help with Computer Problems:

1. Identify the problem
   Is it a Hardware or Software Problems?
2. Think about
   Plan different ways you might solve the problem.
3. Try your possible solutions to the problem
   Try each one until you find a solution.
4. If you do not find a solution
   Ask your teacher or a member of your family for help.

**Common Computer Problems and possible solutions:**

| Problem | Solution |
|---|---|
| 1. Computer slows down when opening an application | - Shut down and Restart<br>- Check for Software Updates<br>- Delete unwanted Applications |
| 2. Browser running slow | - Check Wi-Fi signal<br>- Make sure to update the applications on your device |
| 3. No Internet Connection | - Use the Software to troubleshoot your Wi-Fi connection<br>- Check that the Router is connected<br>- Restart your Router<br>- Try a new Ethernet cable<br>- Contact the customer service of your ISP for help |
| 4. Slow to download | - Restart Computer and Router<br>- Check Internet Speed |

## Lesson 6: Digital File Management

- **Where are students finding information?**
  - **Television:**

It is a device displays a lot of information.
  - **Library:**

It contains many books and articles in many fields.
  - **QR Code:**

It is a symbol for outputting the information on the systems by pointing the device's camera at the symbol.
  - **Interviews:**

It is a face-to-face meeting with two people to exchange information and experiences.

- **What are the accessories of electronic devices that are used to save and store information?**
  - **Flash Memory**

It is used to store and transmit data and information.
  - **Scanner**

Enter pictures and graphics to the computer and save them inside.
  - **Digital Camera**

To take pictures, record audio and video and store them.

- **How to get organized using ICT Tools?**
  <u>File:</u> It is a set of data such as (audio file - image file - video file - text file ...)
  <u>Folder:</u> A group of files or subfolders

- **Create a New Folder:**
1. Right Click on the place where you want to create the Folder
2. Select New
3. Select Folder from the submenu

- **Rename your Folder:**
1. Right Click on the Folder/File icon
2. Select Rename
3. Type the new name, press Enter
- Place documents, images and videos in the correct folder.
- It is preferred to put an appropriate title for each folder.
  <u>Example:</u> The Folder for Pictures is titled "Pictures" and Video Folder is titled "Videos" and so on.
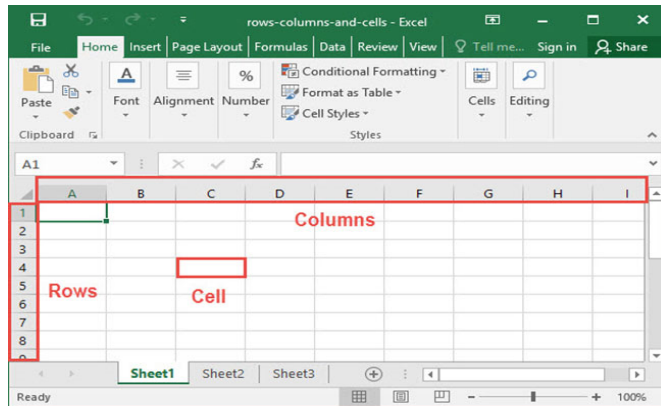
## Lesson 8: Sharing Information

There are many ways to share information with others over the Internet:
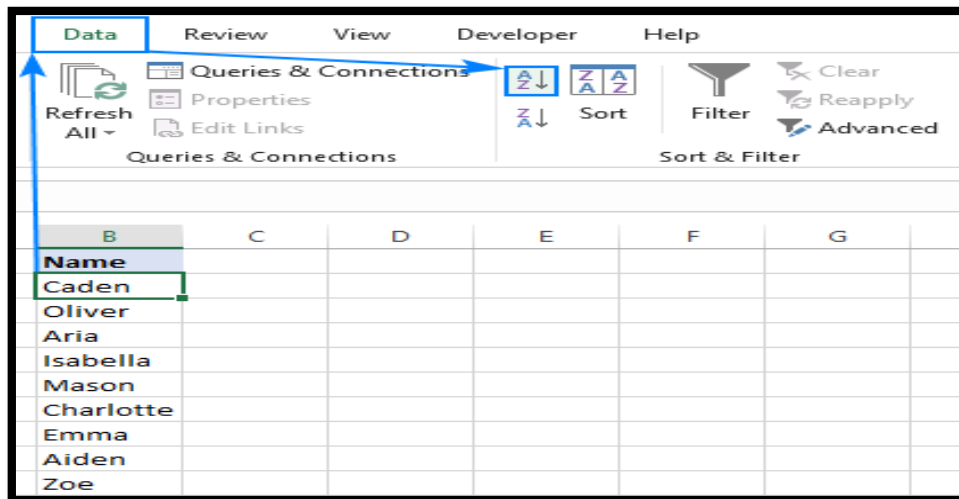
| Sharing information over the Internet | Sharing information over the Intranet |
|---|---|
| It is the sharing of information via Opened Network (WWW) for everyone | It is the sharing of information via Closed Network |
| Information is less safe | Information is more safe |
| Such as: Advertisements - General News - Government Decisions | Such as: Personal Data, and your Thoughts your Research and Files |

Sharing Information Using Microsoft Office Excel:
- Microsoft Excel is to make calculations and spreadsheets.
- It is a set of columns and rows and their intersection produces cells.
- Column titles are Letters like (A – B – C – D – ....... )
- Row titles are Numbers like (1 – 2 – 3 – 4 –........)
- Cell titles are Letters and Numbers (A1 –B2 – C3 – D4 – ......)

## How to arrange the information alphabetically?

Go to <u>Toolbar</u> and Click on <u>Data</u>. Then Click on <u>Sort</u>.



Excel Program represents data in the form of a graph in different formats.

## How to set Formulas in Cells to Add (+) Subtract (~) Multiply (x) or Divide (/) :

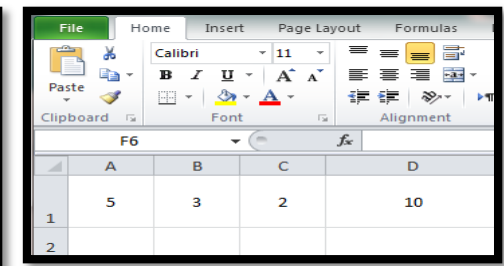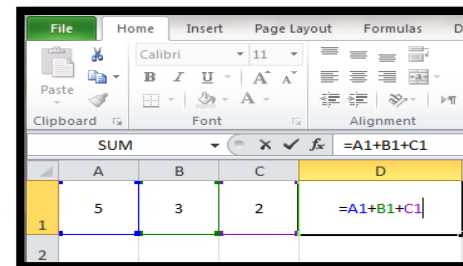1. Click on the cell you want to set a formula.
2. Type (=). This tells Excel you are creating a Formula.
3. Decide which Cells are in your Formula. The letters (Top of Columns) and Numbers (Numbers to the left of the Rows)

## For Example:

Let's say you want to add numbers from Columns A, B and C, Row 1

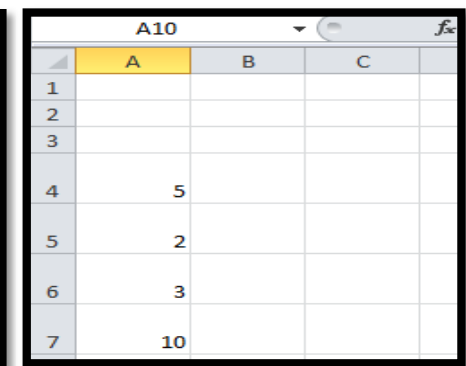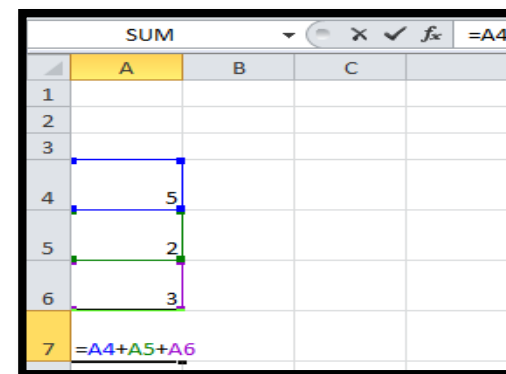You would type the following in the Cell that will create the formula:

$$=A1+B1+C1 \quad \text{(Then Press Enter to see the Result)}$$



Let's say you want to add numbers from the same Column A but different Rows 4,5,6

You would type the following in the Cell that will create the formula:

$$=A4+A5+A6 \quad \text{(Then Press Enter to see the Result)}$$

## Axis 2

### Lesson 2: Protecting Ourselves and Our Information

### Personal Identifiable Information (PII)

- It means your name, address, date of birth and your passwords.

Hackers Risks:

1. Stealing Personal Information
2. Using someone's email address and password to send a virus your friends.
3. Using someone's account number to take money from that account.

Keep your PII safe:

1. Do not share your personal Information on the Internet.
2. Do not sign for a website if it asks for too much Personal Information.
3. Use different strong passwords that contain letters, numbers and special signs and are different for each website.
4. Use Antivirus program on all of your devices.
5. Update your devices regularly. The updates include changes that keep your data safe.

Files may be lost by:

1. Viruses
2. Software Problems
3. Human errors such as dropping and breaking your laptop.

How can you protect your files from being lost?

- Some applications and programs backup data automatically.

Hybrid Backup:

- means using a data storage device that you attach to your computer such as Flash Memory or External Hard Drive or to a Network.
- It is a safer way to backup and store files.

### Lesson 3: Password Security

- There are many ways Hackers can get your password, one way is called Phishing.

Phishing:

- Phishing is sending a message via e-mail or social media applications for stealing your data and personal information.

Examples of Phishing scam:

- A message informing you that you have won a cash prize and asking you for your bank account details to get the prize.
- An attached file is installed on your computer for stealing data or asks you to enter sensitive Information such as bank account details.

Smishing

- is the same thing, but it is a text message instead of an email.

How can we identify phishing scams?

- It contains spelling and grammatical errors.
- Ask you for too much personal data.

Password Managers:

- You need strong passwords to protect your personal data from Hackers.
- A Password Managers creates a strong password for each of your accounts.
- It also tells you if the passwords you already have are too weak or if you have reused them.
- It can tell you if one of your passwords has been stolen online.

Multi Factor Authentication (MFA): مصادقة متعددة العوامل

- It is used to strengthen and back up your passwords
- To prevent hackers from accessing your account and data.
- If you log in to your account through a device other than your main device, you will immediately receive a message on your mobile phone.

- To make sure that you are the owner of the account and you are trying to access your account by using a code for several numbers.

## Example:

- When you try to access the game website from a computer that is not your usual device, you will receive a text message on your mobile phone asking you to confirm that you are the owner of the email address you use to access the site. This text message will include a code of numbers valid for a short period of time that will allow you to access your account only once.

### Lesson 4: How to deal with fake websites?

## Scam Websites:

- They are fake websites to obtain get your personal or financial data and try to hack you and your privacy such as:

  User Name – Password – Bank Account Details – Credit Card Details

## Examples of Scam Websites:

- **Fake Online Shopping Sites:** مواقع تسويق مزيفة They never send you the items you bought correctly.
- **Scareware Sites:** مواقع برمجيات التخويف Websites that say you have a problem and you need to download something.
- **Sweepstakes Scam:** مواقع احتيال عبر الجوائز That offers you a prize that never comes.

## Ways to avoid Scam Websites:

- Do not enter your personal data and information.
- Check for spelling errors and bad grammar, a trusted website will be with almost no mistakes.
- Do a search online before visiting it to see if it is a known scam.
- Check the Site Address URL (Uniform Resource Locator) of the website.

## Victim of a Website:

- Tell your parents or your teacher.

- Contact the child helpline or the General Department for Combating Internet Crimes.
- Report the Scam Websites to the Service Provider, the E-Commerce store and your bank with the help of your teacher or family.

### Lesson 5: Intellectual Property Rights Online Content

- It is Information found on the Internet and it may be e-books - prints - pictures - Videos - audio - games – programs…..

## Copyright:

- Copyright gives creators legal protection for the things they create.
- The symbol for Copyright
- Copyright protects images, music, movies, games, computer software and websites.
- Copyright for a Website is usually at the bottom of the homepage.

## What is not covered by Copyright?

- Works in the public domain.
- Facts and Discoveries.
- (Creative Common) it means works that their owner gives the permission to reuse anytime and anywhere. Everyone can use it.
- Creative works whose owner has been dead for 50 years.

## What should you consider when doing your research for (Copyright Protection)?

- Ask for permission before using any content and assigning the work to its owner or give credit to the creator.

## If the content is written:

- You may use only a small part of a person's writing, such as some sentences or words.
- Transfer the words as they are without changes.
- Reframe ideas in your own style.
- You must mention the name of the book.

## If the content is images:

- The title of the photo, the name of the photographer or painter, and the link to the original copy of the photo must be mentioned.
- If you do not want to get permission or buy images,
- you can make your own images instead.

### Lesson 6 : Using Digital Sourcing

**To search for information:**

• The **first** step is **identifying reliable digital sources** that enable you to accomplish your research tasks.

• Go to the site you want by typing **URL** "Uniform Resource Locator," in the search engine.

• Ask your **teacher** or a **family** member for **help** while browsing a site for the **first time**

• **The best way to find reliable digital sites is: following** the sites **recommended by your teacher or school**, such as the Egyptian Knowledge Bank **(EKB)**.

• Often these websites are stored on a **bookmark bar** in browser

| opinions | the facts |
|---|---|
| It is based on someone's views and experiences | come from research and observation |
| can't be proven | can be proven |
| Can be debated | Can't be debated |
| They are not true for everyone | true for everyone |

**Use multiple sources:**

• It's a good decision to use multiple sources in your research.

• This helps make sure you know all important facts about topic

**If two reliable websites include same information:**

• It means that the facts are true.

• Write notes for the first source, and then scan the next source
for additional facts to add to your notes.

**If two online sources have different information:**

• **Double-check** that both sites are **reliable**.

• Then make sure the **information based on fact** instead of opinion

• **Following copyright** rules and **laws** is also a **good decision**.

**Measured facts:**

• Maps, graphs, info graphics, and charts will be useful.

**Archives and databases can be reliable sources:**

• They **contain** many types of research **materials**, including
books, articles, diaries, letters, and photographs.

• The **Egyptian Knowledge Bank** is an example of an archive

**(URL):**
It is an abbreviation of the word Uniform Resource Locator It is used to enter the site by typing it in the search engine or the address bar.

**There are many sources of information that help us in our research:**

1- Books, articles, notes and letters
2- Pictures and videos (visual information)
3- Maps, graphs, and infographics
4- Archives, records and databases

## Lesson 8: Documenting information appropriately

### When creating your research, you must:

Take notes in your own style

credit the sources you used in your research

Add author's name and the **URL**

Re-read your notes. and if you find missing information, return to the source and look for it Use quotation marks " " when the author's words are important

### To search for information on the Internet by keywords:

press my key **CTRL + F**

Type the term in the search box

The keyword you want to search for will be

The keyword will be highlighted everywhere it appears on the page .

### Paraphrasing إعادة صياغة النص :

Use your own words to explain the idea of the author (writer)

Arranging ideas, sentences structure, and changing some vocabulary words

### The quote الإقتباس :

Repeat the words that someone (author or writer) else has said or written

### From the ethics of quoting من أخلاقيات الإقتباس:

credit the source from which the quote is taken and reason for using it ~ Use some terms and phrases such as

| In this article **Article title** | This shows that |
|---|---|
| According to **Author Name** | This proves that |
| **Author Name** ..... States .. | This illustrates |

### Citing sources الإستشهاد بالمصادر :

At the end of a research report, you List all the sources from which your information was taken.

If you want to credit the source of your information and it is a website, you can type:

### Website link

A highlighted picture or word, when pressed, take you to another site and is known as (*Hyperlink*)